

line. The discovery of *Exodontiella* and the other exodont braconids mentioned above will necessitate a more critical definition not only of the Alysiinae, but also of the Opiinae and probably other braconid subfamilies as well.

The presence of exodont mandibles in both *Exodontiella* and the various members of the Alysiinae is apparently a result of parallel evolution. In the Alysiinae, the primary function of these mandibles is in escape from their hosts' puparium. It will be interesting to learn if the mandibles in *Exodontiella* serve a similar function, or whether they are perhaps used somehow in host finding.

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SCIENTIFIC NOTE

Notes on the Host Plants and Distribution of *Acanthoscelides pauperculus* (LeConte) (Coleoptera: Bruchidae).—The two bruchids that are usually taken most often by sweeping in the Sierra Nevada and westward in California and are most abundant in collections from the Pacific States are *Acanthoscelides aureolus* (Horn) and *A. pauperculus* (LeConte). The ubiquitous *A. aureolus* has a variety of hosts, but the hosts of *A. pauperculus* have remained unknown although a concerted effort was made to find them (Johnson, 1970, Univ. Calif. Publ. Entomol., 59:1-116). I recently reared *A. pauperculus* from seeds of a native clover, *Trifolium obtusiflorum* Hooker, collected at 1100', 24 mi NE Sanger, Fresno County, CA, on 26 June 1975. This is the first record of a bruchid feeding in the seeds of a

New World clover although Kingsolver (1968, Proc. Entomol. Soc. Wash., 70:318-322) reported *Acanthoscelides pyrrhomelas* (Philippi), a bruchid endemic to the New World, feeding in seeds of the Eurasian species *Trifolium pratense* Linnaeus in Chile. Zacher (1952, Zeit. angew. Entomol., 33:460-480) reported several species of the Old World genus *Bruchidius* feeding in Old World clovers.

Acanthoscelides pauperculus is most often collected by sweeping flowers of *Achillea* sp., *Asclepias* sp. and *Lotus* sp. In the foothill woodland plant community where the seeds of *T. obtusiflorum* were collected, adults of *A. pauperculus* were swept in abundance from the flowers of *Rorippa nasturtium-aquaticum* (Linnaeus), *Veronica anagallis-aquatica* Linnaeus, *Boisduvalia stricta* (A. Gray) Greene, *Asclepias* sp., *Lupinus* sp., *Melilotus* sp., the host plant, and from the leaves and fruits of *Ribes* sp., and *Rumex* sp. All of the plants except *Asclepias* were growing either in a small stream or along its banks. *Asclepias* plants were scattered in an open, grassy field near the stream. Because most adult bruchids feed mostly in the flowers of their larval hosts, it is unusual to find adult bruchids with such catholic tastes as *A. pauperculus*. Its abundance in flowers of such a wide variety of plants would seem to indicate that it is necessary for the adults to feed prior to mating and oviposition, again a somewhat unusual trait for bruchids.

Two very close relatives of *A. pauperculus*, *A. inquisitus* (Fall) and *A. napensis* Johnson, will probably be found to infest seeds of species of *Trifolium* when more rearings from different species are made. The distribution of *T. obtusiflorum* and the wider distribution of *A. pauperculus* suggest that this bruchid feeds on more than one species of clover. Because of its apparent specificity to clover seeds and its abundant numbers, there is a distinct possibility that *A. pauperculus* could become a pest of economic clover seed crops, especially if some of our native clovers are used as crops in the future.

According to Turner (1959, The Legumes of Texas) and Munz and Keck (1959, A California Flora), the genus *Trifolium* has about 300 species and is most abundant in north temperate areas but also occurs in Asia, Africa and South America. One center of distribution seems to be western North America (Turner, 1959). Of the 49 species of *Trifolium* listed in Munz and Keck, about two-thirds are considered endemic to California or the Pacific States and their distribution is so limited. About one-third are introduced European or Eurasian species. According to Johnson (1970), *A. pauperculus* has a distribution from southern California to British Columbia and Idaho. The distribution of this bruchid, then, generally matches that of the native species of the genus *Trifolium*. Adults of *A. pauperculus* are most often collected along streams or other moist areas, the habitat of most clovers. A distribution confined to the Pacific States can be explained to some extent on the abundance of its host. Because native species of *Trifolium* also occur east of the Sierra Nevada, a more plausible explanation for the limited distribution of *A. pauperculus* are the barriers to their distribution of our high western mountain ranges and arid deserts. A similar pattern of distribution is found in another bruchid, *Gibbobruchus mimus* (Say). This species is widespread in the central United States where it breeds in the seeds of *Cercis canadensis* Linnaeus. It has never been reared from seeds of redbud, *Cercis occidentalis* Torrey ex Gray, from Tulare County, CA, although I have collected many lots of seeds from there. Recently I reared *G. mimus* from *C. occidentalis* from the Charleston Mountains, Nevada, and the Grand Canyon, Arizona. Apparently the barriers of mountains and deserts have not allowed this bruchid to reach California although the redbud has successfully traversed these barriers. The bruchids, *Acanthoscelides pullus* (Fall) and *A. aureolus* have a much wider distribution in the West, most likely because their hosts (mostly *Astragalus* spp.) occur in both high high mountains and deserts.

The lack of any reported damage to introduced clover seeds by *A. pauperculus*, *A. napensis*, and *A. inquisitus*, and their relatively wide distribution, indicate that they are most likely not introduced species.

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